

Abstract

Method and apparatus to modify a fluid by passing a compound through a selectively permeable membrane is provided. In one embodiment a fluid moving through a vessel is modified prior to its ejection from the vessel. This may be accomplished by urging the fluid into a mixing chamber wherein the mixing chamber is in fluid communication with an exit orifice and a passageway. This passageway may be in communication with a second chamber through a selectively permeable membrane. The fluid may then be altered by passing a compound between the mixing chamber and the second chamber through the passageway and the selectively permeable membrane. A device for modifying a fluid moving through a vessel may contain a first lumen, a second lumen, an exit orifice, and a mixing chamber in communication with the first lumen and the exit orifice. In this device the mixing chamber may have a passageway fluidly connecting it to the second lumen and containing a selectively permeable membrane that may be positioned to selectively pass compounds through the passageway.